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ABSTRACT

The ease of developing lower level computer software and the lack of specified rules or procedures in many areas of the language arts curriculum are largely responsible for the less than ideal quality of software currently available and the dominance of drill and practice programs. To take advantage of the more advanced tutorial programs that do exist, English teachers need either enough experience with computerized interactive instruction to judge for themselves or a reliable source of software reviews. Until now, developers have been designing lessons that focus on easily computerized topics, without a broad perspective on the instruction needed for a comprehensive teaching unit. Teachers should look closely at what they are teaching and then decide what aspects of that content can be computerized instead of just looking at what is available from commercial software publishers and then "fitting it in." The first step is defining what aspects of a course's content have specific, identifiable traits that can be modelled on a computer. Lessons that demand genuine open-ended input would be tremendously difficult to write, but similar lessons that offer students a choice among a limited number of answers could be used to teach such things as plot development or skimming. (JL)

COMPUTERS IN ENGLISH: IS THERE ANOTHER WAY?

by
ANNE AUTEN and SALLY STANDIFORD

Let it be known at the outset: we believe in computers, and in the potential of instructional applications of the ubiquitous little machines in the English classroom. If there are those among you who cling to the notion that the future of the microcomputer in an educational setting is still unproven because of all the "garbage" software you've reviewed, perhaps the following discussion will pique your interest.

The ease of developing lower level computer software and the limited area of language arts curriculum that are amenable to computerization are largely responsible for the less-than-ideal quality of software currently available. In spite of our complaints, however, we often encourage software developers to continue their publishing decisions through our somewhat archaic approach to software selection and use. Perhaps we need to step back and look objectively at the unique roles of both computer and teacher in the language arts classroom.

Both the content domain of English, reading, and the other language arts, coupled with the current state of the technology, have limited computer applications in English. On the one hand, many areas of the content cannot be specified by well-formulated rules or procedures that can be modeled on a computer. On the other hand, in areas where there are such rules, it is not infrequently the case that either the relatively inefficient processing of the microcomputer makes the student-computer interaction so painfully slow that potential benefits are lost or the level of instruction of the software lesson is inappropriate for our instructional goals.

To illustrate these situations, consider the activity of writing a well-structured paragraph with a main idea and appropriate supporting details. It's not possible to specify rules so that a computer could judge whether a student's original paragraph is appropriate. However, there are examples of lessons that lead a student through this process of paragraph development by asking structured questions to focus students' attention on various aspects of the topic. The program stores student responses to ostensibly produce a

well-developed paragraph with a main idea and supporting details. On the surface this seems ideal, but there is no way the computer can be programmed to guard against the student responding with nonsense.

Because of the lack of specified rules or procedures in many areas of language arts instruction, software developers have been producing programs that, for the most part, are drill and practice lessons on those aspects of the English curriculum that are defined parts of speech identification, spelling, vocabulary, punctuation, and syntax. While tutorials are starting to appear on the market that deal with cloze procedure, sentence combining, and general comprehension, you need enough experience with computerized interactive instruction to evaluate any software knowledgeably, or need a resource that provides thorough, current software reviews.

The typical pattern for many English/language arts teachers has been to discover relatively high quality computer lessons (either through personal evaluations, published reviews, or word-of-mouth recommendations), and then to search for a place in the curriculum where the "neat" lesson would fit. Keran has suggested that experimenting with programs developed for other disciplines, such as social studies, is an effective method for you to use in shopping around for applicable computer programs (1983). Software developers have been using the same approach.

Up to now, most developers have been designing lessons that focus on easily computerized topics, without a broad perspective on the instruction needed for a comprehensive teaching unit. They have not focused on the unique partnership of computer and teacher by acknowledging the curricular areas that are best handled by each. As a result, we have what could be described as a "kite-tail" curriculum: because the software has been developed without the teacher and computer roles in mind, packets of programs on diverse topics have been produced. The teacher has been left to select lessons from various developers, tying them together as one ties together different lengths of cloth for a kite tail until it seems to "fly right." The computer-using teacher is assuming, by default, the role of curriculum director rather than of curriculum developer.

We propose that there might be a better way to implement computer capabilities in language arts instruction than the searching-for-software strategies we've described. Instead of opening a space in a lesson plan for a well-prepared lesson on subject-verb agreement, much as you would schedule a film on the Holocaust during a unit on The Diary of Anne Frank, consider the possibility of looking closely at what you teach,

then deciding what aspects of that content could be computerized and what instruction you must deliver. Being ultimately responsible for the instruction that goes on in the classroom, you should decide exactly what material would best be handled by the computer instead of taking pot-luck from the offerings of commercial software publishers.

Before you can make a decision about what aspects of your instruction a computer could deliver and give software developers that information, you need to be familiar with computer capabilities and limitations. The strength of what is commonly referred to as frame-based instruction (because information is presented in the "frame" of the computer screen) is forged in the computer's ability to continuously provide consistently presented instruction and immediate reaction or feedback to student responses. The computer has been referred to as "incredibly fast, incredibly accurate, and incredibly stupid" (Standiford, 1983). It can only react to student responses that it "recognizes" by matching them against material (number or character strings) already programmed into its memory.

What aspects of what you teach have specific, identifiable traits that can be modelled on a computer? These traits must be so well-defined that a computer program can test for their presence or absence in student responses. This need for content to have readily identifiable characteristics is one reason why so many programs developed for language arts are of the fill-in-the-blank, multiple choice variety. They require specific right answers that, in less complex lessons, must be correctly spelled so they can be checked against the answers that are listed in the program. This doesn't preclude the possibility of more sophisticated lessons that could be developed, however.

For example, a lesson on plot development could be designed that would branch in any of several directions to offer instruction or to ask questions based on input supplied by the student. The student would need to choose from three or four suggested plot directions, each of which had identified in the program a bank of key words for each plot possibility. The program would then ask the student certain questions to be assured that the plot development continued logically. Student input would be parsed for the key words and subsequent branching would be based on the presence or absence of those words. This kind of lesson presents a challenge for the programmer, but is possible.

Not so possible would be the lesson that allowed for any plot suggestion from a student. Such open-ended input would

require the lesson designer to brainstorm every plausible plot and to identify key phrases that might be associated with each--a mind bending task, to say the least!

Another example of a workable lesson that would go beyond the parameters of drill and practice combines skills development in both reading and writing. Much research has alluded to the benefits of teaching students to use survey or skimming strategies such as SQ3R, SQ4R (which adds Record to the Read, Recite, Review triad) to improve their reading comprehension (Paulson, 1980; Thornton, 1980; Diggs, 1972). Other studies have suggested methods to help students identify the main ideas in their texts (Baumann, 1981; Bartlett, 1980).

A lesson that could offer practice in these areas as well as in writing an accurate precis or summary might involve identifying key words for a passage of text. A study conducted with college students indicated that students who skimmed a selection and read it once performed as well on tasks of reading comprehension as students who read the entire selection twice, suggesting that skimming is an effective and efficient previewing strategy (Jacobowitz, 1980). As they skim, students attempt to remember key words that they then use to paraphrase main ideas after skimming. Such an exercise, while effective in a paper and pencil medium, would be even more powerful if offered on a computer.

Instead of waiting to have their key word list validated by the teacher before setting about the task of producing a summary, students could get immediate feedback on the accuracy of their selections. The computer program would contain the prose passage and relevant key words, along with irrelevant key words and appropriate messages explaining their irrelevancies. Assured that their skimming practice has produced accurate key words, students could then set to writing a summary that was correct in content, if not in sentence structure.

You as the teacher would then read and comment on students' precis developed from the key word identification. While the computer can react with a list of precoded key words, it cannot judge the effectiveness or logic of prose. To carry the exercise one step further, the computer could then present several related passages from which the student would be required to generalize common strands and produce another summary identifying those strands. A list of generalized key words could be judged by the computer to be sure the student had identified a sufficient subset (with no irrelevancies) to include in a summary. Once again, you would read and comment on the precis.

Such a program could allow you to insert the passages to be read and to list the key words (and irrelevant words) necessary to complete the assignment. The computer is not yet totally capable of identifying good writing style, although programs have been developed that recognize overuse of passive voice, to be verbs and nominalizations, for example. The reading and writing lessons we've described could easily be augmented by the computer, as could other lessons in the language arts content domain, once English teachers have identified the curriculum content and objectives that are best taught by computers.

Shostak believes that "as quickly as possible, English teachers should and must demand effective computer literacy training" (1983). With a sound understanding of how the computer functions and what it is capable of doing as a learning tool, you will then begin to better conceive the possibilities inherent in using computers effectively in the English classroom.

Effective use requires software that is designed to be adaptable and capable of being integrated into the curriculum, with the teacher in mind. You need to articulate what instruction you'd like the computer to deliver and to take an active role in analyzing your curriculum for computer possibilities. You need to be able to demand the best, rather than simply choosing the best from the mediocre.

An excellent resource for information on computer applications in reading and the other language arts is the ERIC Clearinghouse on Reading and Communication Skills. Contact the Coordinator of User Services, 1111 Kenyon Road, Urbana, Illinois 61801, (217) 328-3870 for a free packet of materials. The Clearinghouse is sponsored by the National Council of Teachers of English, an organization that is taking an active role in disseminating information on the new technology in the English teacher's content domain. Be informed, be articulate, and let software developers know what kinds of programs would be useful in your classroom.

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